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Testimony  
Before the Committee on Resources  
United States House of Representatives\*

Hearing on “the Status of the Eastern Oyster (*Crassostrea virginica*) and the  
Petition to List the Eastern Oyster as Endangered or Threatened under the  
Endangered Species Act”  
July 19, 2005

According to the Federal Register, Vol. 80, No. 95 (May 18, 2005), “Under the Endangered Species Act (ESA), a listing determination can address a species, subspecies, or a distinct population segment (DPS) of a vertebrate species (16 U.S.C. 1532 (16)). Since the eastern oyster is an invertebrate species, the entire species would have to be listed under the ESA (or a subspecies, if information indicates that there are subspecies of the eastern oyster) if it is endangered or threatened. A species is endangered if it is in danger of extinction throughout all or a significant portion of its range (ESA section 3 (6)). It is threatened if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (ESA section 3 (19)).”

The Federal Register goes on to identify the range of the eastern oyster: “The eastern oyster is distributed from the Gulf of St. Lawrence to the Gulf of Mexico and south through the Caribbean to the Yucatan Peninsula.”

\* Input from Florida provided by Mark Berrigan; Alabama, Mark Van Hoose; Mississippi, Scott Gordon; Louisiana, Patrick Banks; and Texas, Lance Robinson.

While I am sympathetic to the plight of eastern oysters in the Chesapeake Bay area, I assure you that the eastern oyster Crassostrea virginica is neither endangered nor threatened, especially in the Gulf of Mexico. In the same period cited by Mr. Busch (petitioner) (1880 through 2003), the Gulf of Mexico has seen landings fluctuate dramatically, primarily due to changing environmental conditions, from state to state and within a state. When viewed over these 120+ years, however, or in the shorter period of 1961 to 2004, (Table 1) there is no clear evidence of any continuing pattern of decline. In fact, current levels of harvest throughout the Gulf of Mexico suggest a thriving species. The Gulf has clearly dominated U. S. oyster production since the early 1980's and continues to do so. For the period 1997-2001, the Gulf states contributed 59% of the total United States production (Figure 1). Of this total, Louisiana produced 32%, Texas 13%, Mississippi 8%, Florida 5% and Alabama 1%. In 2003, the Gulf states produced 91% of the eastern oysters in the United States (Maine through Texas).

The eastern oyster is the most important commercial molluscan species in the five states of the Gulf of Mexico. In 2003, 3318 licensed commercial harvesters in these five states were dependent upon this resource. Louisiana had the highest number (1046), followed by Florida (753), Alabama (672), Texas (462) and Mississippi (385). In Louisiana alone, the economic impact of this industry was estimated to exceed 286 million dollars. The industry supported over 3,000 full-time jobs in 2003 when nearly 14 million pounds of oyster meat were produced. Posadas reported that in 2000 the Mississippi oyster industry created 1,594 jobs with a total industry contribution of over 70 million dollars when over 3.5 million pounds of oysters were harvested.

The oyster fishery in the Gulf has a long, varied and diverse history. Just when commercial oyster fishing first began is not known, but subsistence catches date to the earliest inhabitants of our coastal areas. Early colonists developed the industry during the 1800's and its growth has continued to its present day form.

Earliest records of landings for the eastern oyster in the Gulf of Mexico go back to 1880 when harvests of 2.1 million pounds of meat were reported (Table 2). Since the 1960's, oyster production in Florida has ranged from a low of 1.3 million pounds in 1988 to a high of 7.2 million pounds in 1981 with 90% of the production coming from the Apalachicola Bay public reef area. Alabama's production has fluctuated from a low of 5,000 pounds in 1989 to a high of 2.1 million pounds in 1967 with nearly all production coming from the Mobile Bay public reefs. Mississippi's oyster production is almost entirely dependent upon the public reefs in the western part of Mississippi Sound,

and has ranged from a low of 21,000 pounds in 1980 to a high of 4.8 million pounds in 1964. Louisiana, due to its vast estuarine acreage with oyster reefs located throughout the coastal area from the Mississippi state line to the Texas line, produces by far, the greatest volume of oysters. Production has ranged from a low of 4.7 million pounds in 1966 to a high of over 15 million pounds in 2001 (Table 1). Historically, private leases produced as much as 90% of production, in recent years however, about 50% comes from private leases and 50% comes from public reefs. Texas production has ranged from 889,000 pounds in 1979 to a high of nearly 8 million pounds in 1983. The vast majority of this production comes from the public reefs in Galveston Bay. These fluctuations are examples of the wide variances in annual production among and between the Gulf states.

Oyster production Gulfwide and statewide has fluctuated widely over time due primarily to environmental (including water quality) changes annually, seasonally and historically. These wide harvest fluctuations indicate the degree of dependence oysters have upon their environment. In spite of this, Gulfwide oyster production has remained fairly stable and even increased in some geographic areas, unlike declining production in other areas of the country (Table 1). A closer review of Table 1 indicates that Gulf production from the 1961-1965 average through the 2001-2004 average shows that for the 2001-2004 period, production of 25,514 million pounds of oyster meat was higher than for any other 5-year period except the 1981-1985 period when 25,557 million pounds were harvested, a difference of only 43 thousand pounds.

It should be understood, however, that natural and manmade environmental fluctuations can and do cause extreme oyster population variations within a state and even within a certain water body. These environmental fluctuations may benefit oyster populations on one reef and be detrimental on another reef. For example, flooding will benefit oyster reefs located away from the fresh water source by lowering higher salinities, but will have negative effects on those reefs in the close proximity of the fresh water discharge, by lowering salinities below acceptable levels.

In contract to the other oyster producing regions of the United States, the Gulf states have basically maintained and even increased its harvest throughout this century (Table 1 and 2). Environmental degradation is most often blamed in areas where oyster production has decreased. The Gulf states, however, have not been immune to changes within its coastal oyster producing environment. Louisiana, for example, has been losing its coastal vegetated wetlands at a rate of 50 square miles per year. This land loss has

had a dramatic effect on the distribution and quality of aquatic habitat that is suitable for oyster production.

The Gulf's eastern oyster population thrives best at mid-level salinities ranging from 10 to 30 ppt. and near freshwater discharges. These discharges dilute the Gulf's higher saline waters and provide nourishment. Oyster reefs are most productive when they are shielded from high saline waters and their predators and disease. Additionally, bottom type is important for suitable oyster production. Gulf coast estuaries generally contain silt or mud deposited from freshwater sources. Since this material is soft, oysters can sink and become covered with silt. Thus, a firm clay and sandy substrate is necessary to prevent this from occurring.

Since oysters are sessile they are subject to many environmental changes, and as such their populations are subject to wide fluctuations due to these changing conditions. These include floods, droughts, predators (black drum, stone crabs, oyster drills), disease (Dermo and Hazardous Algal Blooms), parasites, deterioration and loss of habitat, estuarine development, and modifications of freshwater inflow. Additionally, man's encroachment into the coastal area has had other negative impacts on their populations. These impacts include domestic and industrial pollution, agricultural runoff, and chemical spills. Unfortunately, due to poor water quality not suitable for direct shellfish harvest, many oyster reefs are either seasonally or permanently closed to shellfish harvest to protect the health of consumers. Though these issues have detrimental impacts on the oyster resources, they are being addressed by state health and resource agencies as well as industry representatives.

The eastern oyster is distributed throughout the estuarine areas of the U.S. Gulf of Mexico. In some areas of the Gulf, oyster reefs are located in the states' territorial sea and even in the Gulf Exclusive Economic Zone (EEZ). Reefs are most abundant in shallow (less than 40 feet) estuaries with salinities ranging from 5 to 20 ppt. Oysters are present in practically every major estuarine system of the Gulf; however, their distribution varies greatly within and among estuaries.

Since oysters are primarily located in the estuarine areas of the states, they almost exclusively fall within the management jurisdiction of the individual states' natural resource agencies. For the Gulf these agencies are:

- Alabama Department of Conservation and Natural Resources
- Florida Fish and Wildlife Conservation Commission
- Louisiana Department of Wildlife and Fisheries
- Mississippi Department of Marine Resources
- Texas Parks and Wildlife Department

Since these natural resource agencies are responsible for implementing rules, regulations, ordinances and/or statutes, they can and do have a dramatic effect on fishery management. All five Gulf states have and will continue to utilize management practices that ensure the viability of the resource and strive to maximize production from existing reefs. This is done by implementing regulations that include, but are not limited to, quotas, seasons, daily bag limits, size limits, gear restrictions, harvest time restrictions, private leasing of water bottoms, limited entry, relaying, cultch planting, water quality monitoring, data collection, licensing and enforcement.

The oyster fishery in Florida and Alabama is primarily comprised of small shallow draft fishing vessels (18-25 feet) from which oysters are harvested with hand tongs (sometimes called rakes). Tongs are attached at the ends of long handles some 12 to 16 feet in length, thus restricting harvest to shallow waters. In Mississippi, tongs and dredges are used to harvest oysters. Dredges vary in size from state to state but are approximately 3 feet wide and weigh about 120 pounds. Dredges are attached to a chain and pulled from a winch. They are usually raised and lowered from the side of the vessel. Dredge boats generally range from 25 to 60 feet in length. Virtually all oyster production in Louisiana and Texas is done with dredges. In Mississippi, 90% of the harvest is with dredges.

A major management practice utilized by all of the Gulf states is to enhance production of oyster reefs through cultch plantings. Cultch material consists of oyster shells, clam shells, limestone, or other suitable materials for deposition. Deposit of these cultch maintains and increases or enhances oyster reef acreage and provides a hard substrate for the oyster larvae to set. The planting of oyster shells or other suitable materials has long been accepted as a management tool that provides tremendous benefits to oyster resource management. Cultch plant sites are selected by surveying bottom conditions and sediment types, turbidity, current patterns, salinity, water temperature and historical catch from the area. Additionally, oyster fishermen are consulted to obtain information on the areas to be selected for plantings. It has been estimated that for each dollar spent in cultch plants that as much as \$20 is returned to the industry in oyster harvest over the years

Florida, for example, since 2000, has planted nearly one million bushels of oyster shells to develop habitat on its public reefs. Additionally, they have contracted with local oyster associations to relay and transplant over one million bushels of live oysters from conditionally approved and restricted harvesting areas to public reefs where water quality and environmental conditions are more favorable.

The major goal of managing a renewable natural resource like oysters is to ensure the viability of that resource and to optimize production for the benefit of the harvester, packer, shucker, processor, distributor, the fishing community and ultimately consumers. Proper oyster reef management also benefits the environment by increasing habitat and diversity of fauna. Since oysters are filter feeders they are also helpful in reducing suspended silt and phytoplankton.

Intensive management and ambitious oyster relaying and cultch planting programs, however, have not solved all of the oyster industry's problems. Hurricanes, droughts, periodic floodwaters and inferior sanitary water quality in oyster growing areas continue to plague the industry. Even more disturbing is that these problems will become more severe as the Gulf's coastal habitat deteriorates (by natural and man made factors), unless we have the will to prevent further deterioration.

Oysters in the Gulf states are an excellent example of the renewability of a fishery resource. After approximately 125 years of exploitation and habitat modifications, the industry flourishes. While these past successes may be at least partially attributable to the vastness of the Gulf's estuarine systems, the oyster industry's fate 125 years in the future will certainly be determined by the resolve of management and industry.

In the Petition submitted by Ecosystem Initiatives Advisory Service to List the Eastern Oyster as a Threatened or Endangered Species Under the Endangered Species Act of 1973 not a single reference was found identifying a problem or potential problem with eastern oysters in the Gulf of Mexico.

Therefore, even though the eastern oyster has had wide fluctuations in abundance, since the 1880's these variations are largely a result of changing environmental conditions. Oyster populations are well within historical levels and issues with oysters in the Gulf are being addressed by each state's natural resource agency. Additionally, oyster resource assessments conducted by each Gulf state's natural resource agency show that oyster resources are well within historical limits. All oyster survey data as well as

oyster landing statistics (Tables 1 and 2) dramatically indicate that the eastern oyster in the Gulf of Mexico is **IN NO WAY THREATENED OR ENDANGERED**, and should **NOT** be considered in this petition for listing as such.

Under the ESA Statutory Provisions and Policy Consideration National Marine Fisheries Service (NMFS) is required to make a finding as to whether a petition to list a species presents substantial scientific or commercial information indicating the petitioned action may be warranted. ESA regulations define “substantial information” as the amount of information that would lead a reasonable person to believe the measure proposed in the petition may be warranted (50CFR 424.14(b)(i)). Once NMFS considers all pertinent information, I am confident that they will agree that **NO REASONABLE PERSON** would find the eastern oyster to be threatened or endangered, especially in the Gulf of Mexico.

**Table 1: Historical Oyster Production among Gulf States, 1961-2004**

<b>Year</b>	<b>FL</b>	<b>AL</b>	<b>MS</b>	<b>LA</b>	<b>TX</b>	<b>Total 1,000 lb</b>
1961	3,255	509	3,241	10,139	1,096	18,240
1962	4,952	443	2,073	10,160	1,210	18,838
1963	4,283	995	4,680	11,563	2,618	24,139
1964	2,793	1,005	4,829	11,401	3351	23,385
1965	2,789	493	2,696	8,343	4,835	19,156
<b>1961—1965 average:</b>						
	<b>3,614</b>	<b>689</b>	<b>3,504</b>	<b>10,321</b>	<b>2,623</b>	<b>20,752</b>
1966	4,157	1,304	2,232	4,764	4725	17,182
1967	4,578	2,087	3186	7,743	3,553	21,747
1968	5,318	1,211	3,786	13,122	3,302	26,739
1969	4,912	481	1,430	9,178	3,764	19,765
1970	3,573	279	548	8,639	4,675	17,714
<b>1966—1970 average:</b>						
	<b>4,508</b>	<b>1,072</b>	<b>2,356</b>	<b>8,689</b>	<b>4,004</b>	<b>20,629</b>
1971	3,529	250	1215	10,528	4,744	20,266
1972	3,231	1,069	1,220	8,805	3,935	18,260
1973	2,409	591	612	8,953	2,349	14,914
1974	2,653	733	276	9,972	1,244	14,878
1975	2,134	638	1,080	13,687	1,756	19,295
<b>1971—1975 Average:</b>						
	<b>2,791</b>	<b>656</b>	<b>881</b>	<b>10,389</b>	<b>2,806</b>	<b>17,523</b>
1976	2,602	1,236	1,516	12,334	3,881	21,569
1977	4,072	1,549	1,384	10,065	2,600	19,670
1978	5,882	760	682	9,662	1,097	18,891
1979	6,125	460	272	7,714	889	15,461
1980	6,756	55	21	6,947	1,738	15,517
<b>1976—1980 average:</b>						
	<b>5,058</b>	<b>812</b>	<b>775</b>	<b>9,344</b>	<b>2,203</b>	<b>18,222</b>
1981	7170	1,330	467	9,093	1,309	19,366
1982	4,782	1,497	2,576	12,621	3,633	25,150
1983	4,307	336	3,333	13,229	7,941	29,165
1984	6,621	477	1,378	13,952	5,168	27,596
1985	4,392	1,442	1193	14,347	5,134	26,509
<b>1981—1985 Average:</b>						
	<b>5,454</b>	<b>1,016</b>	<b>1,789</b>	<b>12,648</b>	<b>4,637</b>	<b>25,557</b>
1986	2,084	946	1,202	12,654	5,607	22,493
1987	3,518	88	132	12,027	2,897	18,662
1988	1,314	103	147	13,254	1,671	16,269
1989	1,698	5	100	11,606	2,407	15,816
1990	2,055	83	96	8,153	1,905	14,750
<b>1986-1990 average:</b>						
	<b>2,134</b>	<b>245</b>	<b>494</b>	<b>11,539</b>	<b>2,897</b>	<b>17,309</b>

<b>Year</b>	<b>FL</b>	<b>AL</b>	<b>MS</b>	<b>LA</b>	<b>TX</b>	<b>Total 1,000 lb</b>
1991	1,793	255	101	7,265	2,916	12,330
1992	2,498	1,202	707	9,183	2,498	16,088
1993	2,701	920	1,258	10,315	2,964	18,158
1994	2,011	712	674	11,328	4,614	19,339
1995	1,458	710	2,248	13,800	5,496	23,712
<b><u>1991-1995 average:</u></b>						
	<b>2,092</b>	<b>760</b>	<b>998</b>	<b>10,378</b>	<b>3,698</b>	<b>17,926</b>
1996	1,411	621	1,624	12,935	5,586	22,177
1997	1,867	687	3,500	13,221	4,579	21,987
1998	1,503	313	2,389	12,856	3,438	20,499
1999	2,235	345	2,793	12,128	6,411	23,912
2000	2,520	792	3,548	11,513	6,187	24,560
<b><u>1996-2000 average:</u></b>						
	<b>1,907</b>	<b>538</b>	<b>2,771</b>	<b>12,553</b>	<b>5,240</b>	<b>23,009</b>
2001	2,559	623	2,653	15,133	4,700	25,668
2002	1,943	759	2,738	13,962	4,708	24,110
2003	1,750	811	4,042	13,607	6,834	27,044
2004	1,669	909	3,184	13,903	5,569	25,234
<b><u>2001-2004 average:</u></b>						
	<b>1,980</b>	<b>775</b>	<b>3,154</b>	<b>14,151</b>	<b>5,453</b>	<b>25,514</b>

Source: 1961-2000 data, National Marine Fisheries Service

Source: 2001-2004 data, Alabama, Mark Van Hoose, Florida, Mark Berrigan, Louisiana, Patrick Banks, Mississippi, Scott Gordon, Texas, Lance Robinson

Figure 1.

# AVERAGE ANNUAL PERCENT CONTRIBUTION BY GULF STATE TO U.S. OYSTER LANDINGS (1997 - 2001)

(All species combined, pounds of meat)

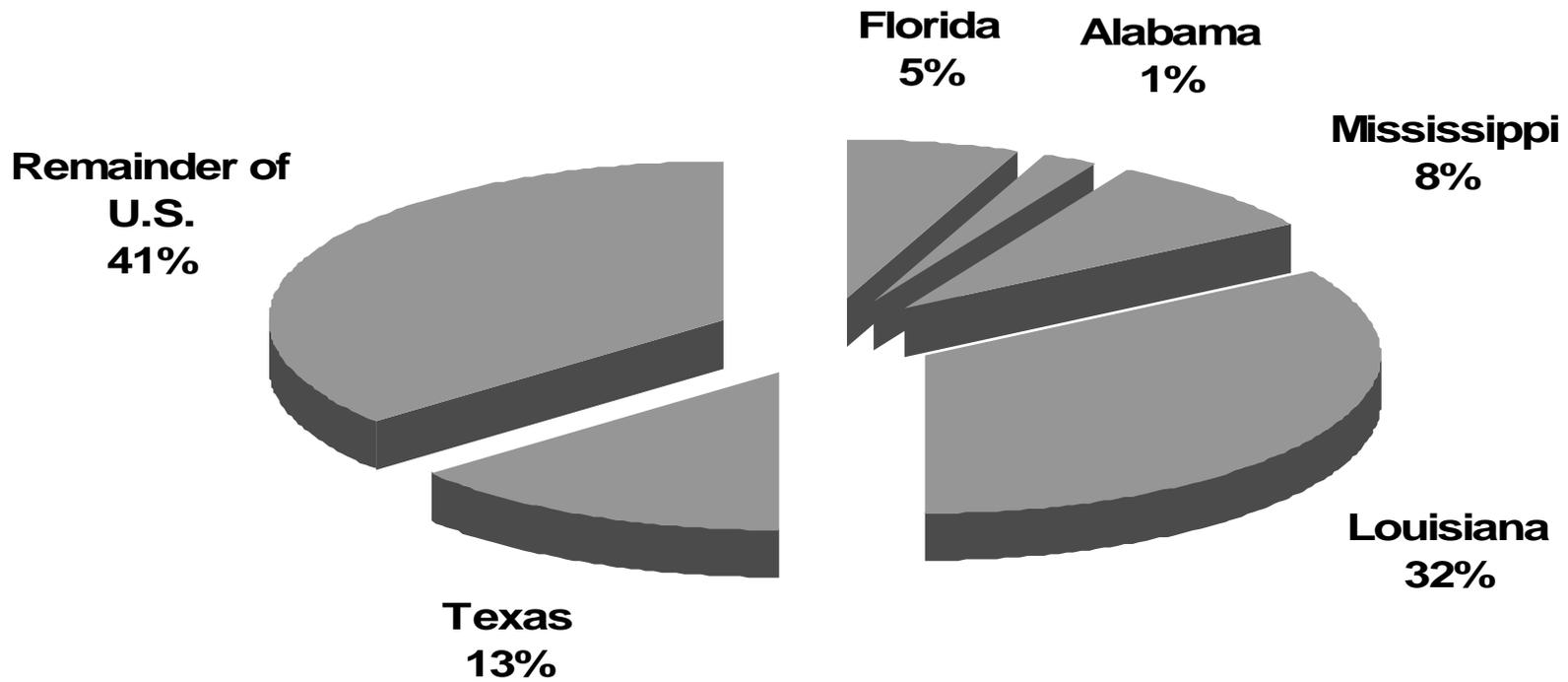


Table 2.  
**GULF FISHERIES**  
**HISTORICAL CATCH STATISTICS**  
**OYSTERS, 1880-1965**

(THOUSANDS OF POUNDS)

YEAR	FLORIDA, WEST COAST 1/	ALABAMA	MISSISSIPPI	LOUISIANA	TEXAS	TOTAL
	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY
1880	270	327	62	1,189	324	2,172
1887	(2)	(2)	1,447	2,733	1,240	(2)
1888	823	238	1,910	2,902	1,652	7,525
1889	1,229	1,372	2,105	3,367	1,745	9,818
1890	1,611	1,506	2,008	3,392	2,133	10,650
1897	797	798	1,568	3,866	1,723	8,752
1902	3,057	1,088	5,989	4,830	1,661	16,625
1908	3,670	1,678	2,657	11,953	2,369	22,327
1911	1,140	1,162	1,621	12,419	1,766	18,108
1918	1,511	376	3,168	4,522	2,312	11,889
1923	1,053	730	4,224	4,119	1,742	11,868
1927	1,238	521	6,693	6,640	1,910	17,002
1928	1,738	1,886	5,049	6,246	1,250	16,169
1929	1,505	179	6,643	4,549	1,729	14,605
1930	1,501	287	4,896	4,846	1,157	12,687
1931	1,406	769	3,438	3,590	982	10,185
1932	1,109	859	5,222	2,978	981	11,149
1934	1,357	392	4,904	5,591	1,312	13,556
1936	917	992	5,771	5,743	823	14,246
1937	817	1,235	12,894	8,048	1,190	24,184
1938	858	1,359	2,241	10,222	1,356	16,036
1939	742	1,358	7,706	13,586	987	24,379
1940	669	936	2,270	12,412	1,297	17,584
1945	1,496	1,606	265	9,884	719	13,970
1948	(2)	1,531	1,309	9,016	579	(2)
1949	1,086	1,586	462	9,688	299	13,121
1950	873	2,070	508	8,716	125	12,292
1951	681	2,191	27	8,164	456	11,519
1952	542	1,842	23	11,402	828	14,637
1953	564	1,450	318	9,435	1,069	12,836
1954	667	739	977	8,361	699	11,443
1955	630	1,581	1,731	9,396	543	13,681
1956	857	769	846	10,056	985	13,513
1957	710	1,291	863	10,490	953	14,307
1958	795	458	579	8,265	311	10,408
1959	1,415	895	333	9,667	1,411	13,721
1960	1,931	1,169	2,391	8,311	2,296	16,098
1961	3,255	509	3,241	10,139	1,096	18,240
1962	4,952	443	2,073	10,160	1,210	18,838
1963	4,283	995	4,680	11,563	2,618	24,139
1964	2,793	1,005	4,829	11,401	3,357	23,385
1965	2,789	493	2,696	8,343	4,835	19,156

1/ FROM 1880 TO 1929, INCLUDES CATCH OF OYSTERS ON THE EAST COAST OF FLORIDA.

2/ NOT AVAILABLE.

Source: NMFS

